

one from Guildford, one from Fleet, and one labelled "ex coll. Capron"; these are var. *jucunda*, Weise, which name is also applied to examples with blue elytra in which the head and thorax are blue-green or æneous. Mr. E. A. Butler has two specimens of var. *jucunda* which he took at Bray, in August, 1893.

*C. aurea*, Geoffr.—This species in its prevalent form has the upperside entirely coppery-bronze, but green examples are not uncommon, and, if dark green, they are var. *lata*, Weise. Then there is the dark form, *cyanea*, Marsh., with the upper-side dark blue, violet-blue, or greenish-blue and the antennæ and legs somewhat darker than usual. Bright blue specimens with the antennæ and legs entirely yellow are var. *gaudens*, Steph., of which I have seen an example from Ditchling, Sussex, ex coll. Britten. Var. *cyanea* I have seen from Chattenden, Kent, Weybridge, Surrey (Champion); Colchester (Harwood); and I am indebted to Mr. E. A. Waterhouse for an interesting account of its occurrence at Glemsford, Suffolk, on June 5th, 1897. In a wood there, some parts of which were pretty well carpeted with the oxlip, *C. aurea* was fairly abundant on aspen, and on two particular bushes growing together there were at least as many blue as coppery specimens. At the request of Mr. C. O. Waterhouse, to whom I applied on the subject, Mr. Gahan has been good enough to examine Marsham's examples of *cyanea*, and he finds that they agree wholly, except in colour, with *C. aurea*. This is noteworthy in view of the fact that Everts (Col. Neerl. ii. p. 463) puts *cyanea*, Marsh., as a variety of *smaragdina*, Foudr.

Colesborne, Cheltenham :

April 26th, 1909.

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NOTES ON *THYSANOPTERA (TUBULIFERA)* NEW TO THE  
BRITISH FAUNA, WITH  
DESCRIPTION OF A NEW SPECIES OF *MEGATHRIPS*.

BY RICHARD S. BAGNALL, F.E.S.

Since my last paper on new genera and species of British *Thysanoptera* (Ent. Mo. Mag., Ser. 2, vol. xix, pp. 3—7, 1908) was published I have had the opportunity of collecting and examining further material, including thirteen species new to the fauna of the British Isles, four of which are referable to the *Tubulifera* and form the subject of this preliminary paper.

*Cryptothrips dentipes*, Reuter, has already been recorded from

Ireland this year; *Megathrips nobilis*, sp. n., is a fine species and a very interesting addition to our fauna; *Trichothrips copiosus*, Uzel, is evidently a widely distributed European species, and I have no doubt that it will ultimately be found more or less commonly in this country, whilst *T. semicæcus*, Uzel, was only known previously from Bohemia, the macropterous form, herein recorded, being new to science. I believe that if the *Tubulifera* were systematically collected in the South of England many more species would be added to the British fauna; they should be searched for amongst dead leaves, moss, under bark of fallen trees, in flowers, &c., and collected into tubes of 70 % alcohol, or into a weak solution of formalin.

A few Entomological friends have during the past year very kindly collected and sent me parcels of *Thrips*, all of them interesting, and I would take this opportunity of expressing my gratitude to Dr. David Sharp, F.R.S., and Mr. H. St. J. K. Donisthorpe for their very interesting communications.

#### Sub-Order TUBULIFERA.

##### *Megathrips nobilis*, sp. nov.

Length, ♀, 4.0—4.7 mm.: ♂, 3.5—3.8 mm.

Colour, coal-black, antennæ with third and fourth joints yellow, tipped with black, and basal third of fifth joint yellow.

♀. Head long, more than twice as long as wide across eyes; slightly swollen at basal-third; vertex slightly raised; cheeks sparsely set with short spines. Eyes small; ocelli small, posterior pair widely separated and touching inner margins of eyes at a line drawn through them at their anterior third; anterior ocellus at apex of head and protected by a pair of long bristles; post-ocular bristles short. Antennæ as long as head and prothorax together; joints three to five claviform and six to eight fusiform; sense-cones long and slender. Mouth-cone nearly reaching to base of prosternum, blunt at tip; palpi stout. Prothorax one-third the length of head, and bristles at each posterior angle the longest; posterior-marginal pair, and pair at anterior angles short, and others small and inconspicuous; surface finely reticulated. Pterothorax sub-quadrate, surface finely reticulated. Wings reduced to pads. Legs comparatively stout, fore-tarsal tooth obsolete in both sexes. Abdomen moderately broad, wider than pterothorax; widest at fourth segment and from thence narrowing smoothly to tube. Tube nearly four times as long as ninth segment and as long as the head, slightly constricted near tip; surface minutely setose.

♂. In the male the sixth abdominal segment is furnished with a pair of stout tubiform processes having their bases at each anterior angle and extending beyond the apex of the seventh segment; the seventh segment has a minute bristle-set tubercle, and the eighth a strong, lateral tooth-like process near each apical angle. The tube is shorter than the head and about three times the length of the ninth segment.

Apart from structural characters *M. nobilis* may be easily separated from *M. lativentris*, Heeger, and *M. hesperus*, Moulton, by the colour of the tibiae; and from *Bacillothrips linearis*, Buffa, and *M. longiceps*, Reuter, by the broader form and shorter head. Superficially it more closely resembles *M. bonannii*, Uzel, and *M. spinosus*, Hood; from the last-named, of which the female only is known, it may be separated by the shape of the head, the colour of the antennæ (apparently black in *spinosus*), which are also longer and have the intermediate segments more elongated, the shorter post-ocular bristles and the more sparingly spinose fore-legs; from *M. bonannii*, Uzel, *M. nobilis* may be easily recognised by the shape of the head, the shorter tube in the female, and by the lateral projections on the eighth abdominal segment in male, which are absent in *bonannii*.

Numerous brachypterous specimens of both sexes were taken by Dr. Sharp, F.R.S., in the spring (April and May) of 1896, from amongst a bundle of dried sedge that had been left long lying in the middle of Wicken Fen. Dr. Sharp is to be congratulated on this very interesting capture, *M. nobilis* ranking as one of the largest known European species, and only equalled in size by *M. bonannii*.

*Cryptothrips dentipes* (Reuter), 1880;

Bagnall, The Irish Naturalist, xviii, p. 41 (1909).

I have only recently recorded this species from the British Isles on specimens taken by myself at Portmarnock near Dublin, September, 1908. Dr. Sharp took several specimens with *Megathrips nobilis* at Wicken Fen in the spring of 1896.

DISTRIBUTION: Finland (*Reuter*), Bohemia (*Uzel*), and Ireland (*R. S. B.*); England.

*Trichothrips semicæcus*, Uzel, 1895.

*Trichothrips semicæca*, Uzel, Mon. der Ordnung *Thysanoptera*, p. 249, 1895.

*T. semicæcus* is a more slender insect than *T. pedicularius*, Hal., and may be readily recognised by the type of coloration. The tube, excepting base, is blackish; the first three antennal joints are yellow and the rest blackish-brown, whilst the general colour of the body is greyish-yellow, the prothorax being darker.

Uzel evidently described the species from the apterous form; the macropterous form, apart from the presence of wings and the corresponding development of the pterothorax, has the eyes much larger than in the apterous form. In the autumn of 1908 I found both sexes of the winged and wingless forms and also the larvæ, and other earlier stages, in profusion under the bark of a decaying willow at Greatham, near Hartlepool, co. Durham.

DISTRIBUTION: Bohemia (*Uzel*); England.

*Trichothrips copiosus*, Uzel, 1895.

*Trichothrips copiosa*, Uzel, Mon. der Ordnung *Thysanoptera*, p. 252, pl. IV, fig. 32, and pl. VII, figs. 138—140, 1895; Reuter, Acta Soc. pro. Fauna et Flora Fennica, xvii, No. 2, p. 25, 1899; Buffa, Atti della Soc. Tosc. di Sci. Nat., Memorie, xxiii, p. 70, 1907.

Four specimens from under the bark of a beech tree, taken by Mr. Donisthorpe in Epping Forest, April, 1908.

DISTRIBUTION: Lapland, Finland, Bohemia, Hungary and Italy; England.

Winlaton-on-Tyne:

April 29th, 1909.

OBSERVATIONS ON *EMPIS OPACA*, F.

BY A. H. HAMM.

Last year in making observations on *Empis livida* I also endeavoured to study other species of the same and allied genera. In this attempt I was unsuccessful, the weather being unfavourable or the season too far advanced. I have, therefore, been looking forward to this season in order to continue, if possible, the work begun last year. For several past week-ends I have sought unsuccessfully to find some of the earlier species. Yesterday (May 16th) I at last came upon a spot where this insect (*Empis opaca*) occurred in some abundance, along a rather high hedge bordered on either side by sandy fields, at Lye Hill, near Cowley, Oxford. At 11.20 a.m. I found a male with prey; it was carefully boxed, without disturbance, so that the manner of holding the victim might be studied. Through the glass-bottomed box it could be seen that the prey was held by the two intermediate legs, both anterior and posterior pairs and the proboscis also being quite free. I afterwards noted the same in other individuals seen at rest. Numbers of both sexes were observed sitting about upon the low herbage, but not one was seen to move; for a strong cold wind was blowing down the hill, making the conditions very unpleasant. After waiting some little time I moved off to try and find the species in a more sheltered place, but after more than an hour's fruitless search I returned to the original spot. It was now about 1 p.m. and the weather had improved, the sun being fairly bright. I soon saw that the Empids were now on the move, and at 1.5 p.m. had the satisfaction of witnessing a male (with prey) pair with a female. The actual pairing took place in the air, after